

# THE CAMBRIDGE STATISTICS DISCUSSION GROUP

Wednesday 30th November 2005 7:15 for 7:45

The Statistical Laboratory,  
Centre for Mathematical Sciences,  
Wilberforce Road, Cambridge

## Design of experiments and analysis of data concerning GM crops

**Joe Perry, Suzanne Clark**

Rothamstead Research, Harpenden

**Peter Rothery**

Centre for Ecology & Hydrology, Monks Wood

**Abstract:** My research on GM crops has largely involved collaboration on the design and analysis of the UK Farm Scale Evaluations of genetically modified herbicide-tolerant (GMHT) crops. Results concerning the effects of herbicide management practices on farmland wildlife for three spring-sown crops (beet, spring oilseed rape and maize) were published in autumn 2003 and spring 2004; results from the fourth crop, winter oilseed rape, were published sometime in March 2005. A summary will be given of published results to date and other GM work. Simple mathematical models can be used to show how adverse effects of GMHT systems on the wildlife in sugar beet crops might be mitigated. Another study involved mathematical modelling relating to coexistence of GM crops to organic or conventional crops; this estimated land available for planting and how this may be affected by the separation distances proposed between GM and other crops. Other modelling involves gene flow and demonstrates how decisions on separation distances may be critically dependent on assumptions made for long-distance gene flow. Ongoing work with Marie Castellazzi (Rothamsted Research) is within a 42-partner EU-funded project entitled SIGMEA, in which gene flow models developed in France are to be upscaled to the landscape level. A short description will be given of our work in this project, to design a landscape simulator.

**Speaker:** Joe Perry has worked at Rothamsted Research for 29 years, researching quantitative methods applied to ecology. He spent 16 years in the Statistics Department, and moved to his current Division, of Plant & Invertebrate Ecology in 1993. For many years he has researched methods of detecting spatial pattern, and his SADIE system is used increasingly to measure clusters in the form of patches and gaps in abundance and to quantify spatial association. He was awarded a DSc degree by the University of Reading in 1989 and since 1994 he has been Visiting Professor of Biometry at the University of Greenwich. He is currently President of the British Region of the International Biometric Society. His work on GM began in 1999 when he teamed up with Peter Rothery and Suzanne Clark as part of the Consortium formed to undertake the UK's Farm Scale Evaluations (FSE) of Genetically Modified Herbicide-Tolerant crops. The FSE studied the effect of herbicide tolerant systems of management on farmland wildlife. They became the biggest study of the environmental impact of GM crops conducted anywhere in the world and represented the only time that scientists have evaluated the environmental impact of a new farming practice in the UK before its introduction. When not at work Joe enjoys singing and playing cricket.

**Directions:** The main entrance is reached from Clarkson Road by going along the footpath to the right of the Newton Institute, and turning left through the gatehouse towards the main building (Pavilion A), which has a glass front and a curved grassed roof. The main entrance is in the middle of the glass front. Coffee before the talk will be in the common room in Pavilion D, and the talk will be in Meeting Room 5 in Pavilion A.. Free Parking is available after 5pm on Clarkson and Wilberforce Roads.

### **Provisional Next Meetings (2006):**

1st February – Stephen Duffy (Cancer Research UK) on 'Some issues of evaluation in mammographic screening'.

13th March – Ian White (Biostatistics) on 'Analysing imperfect randomised trials'.

3rd April – Rebecca Turner (Biostatistics).

**Supper:** Some members eat before a talk at the University Centre meeting in the downstairs bar at 6pm. All welcome !

**Subscriptions:** of 4 pounds are now due for attending the 2005-2006 session.

**Secretary:** Peter Watson, MRC Cognition and Brain Sciences Unit, 15 Chaucer Road, Cambridge CB2 2EF;

telephone 01223 355294 Extension 801; E-mail [peter.watson@mrc-cbu.cam.ac.uk](mailto:peter.watson@mrc-cbu.cam.ac.uk)

## Approved Minutes of Annual General Meeting 2003-2004

The Annual General Meeting for the year 2003-2004 was held at the Department of Applied Mathematics and Theoretical Physics on 24th November 2004. Present: Ted Harding (in chair), Margaret Corbett, John Dickins, Blaise Egan, Mary Garratt, Simon Godsill, Krys Kelly, Andrew Lynch, Pamela Morris, Matt Scarisbrick, Peter Treasure, Peter Watson, Gary Young.

Apologies: Margaret Ely, Helen Tate.

The **minutes** of the previous A.G.M. were circulated and approved.

**Reports:** The **Treasurer** reported a healthy balance of £200 in the bank account. Further details to follow. Subscriptions will once again be £4 for the 2004-2005 session. The **Secretary** reported attendance was consistent with the previous year.

**Election of officers and committee:** The committee were re-elected unopposed. The committee for 2004-2005: *chair* Ted Harding; *secretary* Peter Watson; *treasurer* Margaret Ely ; *officio* Dave Andrews; *ordinary* Margaret Corbett, Tim Sparks, Helen Tate.

**Any Other Business:** None.

### Treasurer's Accounts 2004-2005

Expenditure	2004-05	Income	2004-05
Total	£23-34	Initial cash balance	£120-06
		Subscriptions	£76-00
Balance	£172-72		
Totals	£196-06	Total	£196-06

## Draft Minutes of Annual General Meeting 2004-2005

The Annual General Meeting for the year 2004-2005 was held at the MRC Cognition & Brain Sciences Unit on 4th October 2005. Present: Ted Harding (in chair), Steve Brooks, Tim Cole, Margaret Corbett, John Dickins, Margaret Ely, Mary Garratt, Diana Gillooly, Pamela Morris, Haidee Philpott, Roger Sewell, Christiana Spyrou, Peter Treasure, Peter Watson. **Apologies:** Anthony Edwards, Joe Perry, Nasrollah Saebi, Helen Tate.

The **minutes** of the previous A.G.M. were circulated and approved.

**Reports:** The **Treasurer** presented the accounts which showed a healthy balance due to reduced costs. It was agreed to have a discussion on future payment schemes to reduce income and other group issues in a preliminary session preceding a talk near the end of the 2005-2006 session. In the meantime it was agreed subscriptions should stay at £4 for the coming session. The **Secretary** reported attendance seemed to have benefitted from more frequent publicity of meetings.

**Election of officers and committee:** Haidee Philpott was nominated as an ordinary member to replace Tim Sparks who stepped down after many years service. Committee for 2005-2006: *chair* Ted Harding; *secretary* Peter Watson; *treasurer* Margaret Ely ; *officio* Dave Andrews; *ordinary* Margaret Corbett, Haidee Philpott, Helen Tate.

**Any Other Business:** None